

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on July 18, 2003, and the references cited therewith.

Claims 25, 28, 29, and 101 are currently amended solely to fix grammar, claims 79-88 are cancelled (Applicant reserves the right to reintroduce these restricted claims in a subsequent divisional patent application), and claims 108-115 are added; as a result, claims 1-78, 89-115 are now pending in this application.

' 102 Rejection of the Claims

Claims 1-7, 10-12, 25, 26 28, 29, 30, 33, 34 and 65 were rejected under 35 USC ' 102(b) as being anticipated by Bhattacharyya et al. (US 4,333,808). Applicant respectfully traverses.

Regarding claim 1, Bhattacharyya et al. say nothing about an electrolyte, nor do they describe supplying an energized second material different than the first material towards the substrate adjacent the location to control growth of the first material at the location, as in the present claims. Rather, Bhattacharyya et al. describe implanting O⁺ or N⁺ to adjust stoichiometry excess of O⁺ or N⁺ (column 2 line 13), not to control growth. They later anneal to stabilize the oxide structure (column 2 line 17). The Office Action has thus failed to provide the recited elements of the present claims. In contrast, the present claimed invention provides the energized second material different than the first ... to control growth of the first material at the location. Thus claim 1 and its dependent claims appear not to be anticipated by the cited reference, and appear to be in condition for allowance. Accordingly, reconsideration and an early indication of allowance of claim 1 and its dependent claims is respectfully requested.

Regarding claim 65, Bhattacharyya et al. also say nothing about forming a seed film on the substrate and then forming a first film on the seed film by depositing a first material to a location on the seed film, and supplying a second material different than the first material adjacent the location to control growth of a crystalline structure of the first material at the location. Applicant respectfully submits that the Office Action has failed to provide a prima facie case for anticipation. Thus, claim 65 and its dependent claims appear not to be anticipated by the cited reference, and appear to be in condition for allowance. Accordingly, reconsideration

and an early indication of allowance of claim 65 and its dependent claims is respectfully requested.

Regarding claim 11, in addition to the shortcomings in the Office Action arguments described above, Bhattacharyya et al describe using 1 to 50 KeV (1000 eV to 50,000 eV), well outside the range claimed in claim 11 (5 eV to 200 eV). Accordingly, reconsideration and an early indication of allowance is respectfully requested.

Regarding claim 12, in addition to the shortcomings in the Office Action arguments described above, Bhattacharyya et al describe using ion implantation after the metal film is deposited, not during growing of the film of the first material. Thus, the reference is controlling the stoichiometry after the first material is deposited, not “of a growing film of the first material” as recited in claim 12. Accordingly, reconsideration and an early indication of allowance is respectfully requested.

Regarding claim 25, this claim is amended to clarify that the two materials deposited for the electrolyte in this claim are not the same as the first and second materials for the first layer. If Bhattacharyya et al. are to be interpreted as using two different materials to deposit the “first layer,” then they would lack two different materials for an electrolyte (which is also lacking in the reference). Accordingly, reconsideration and an early indication of allowance is respectfully requested.

As to claim 30, silicon warpage and “damage” is not thermal degradation of the material, as described and claimed. For this reason, as well as the additional reasons described for claim 1 above, this claim appears to be in condition for allowance. Accordingly, reconsideration and an early indication of allowance is respectfully requested.

As to claim 33, Bhattacharyya et al describe destroying the crystalline structure not controlling it (column 4 lines 31-33 “O⁺ and N⁺ is implanted within the metal oxide coating changes the crystalline structure to an amorphous structure), thus teaching away from the invention as described and claimed. For this reason, as well as the additional reasons described for claim 1 above, this claim appears to be in condition for allowance. Accordingly, reconsideration and an early indication of allowance is respectfully requested.

As to claims 66 and 70, 67, 73, and 76, Bhattacharyya et al. describe a metal conductor

layer into which or on top of which a metal oxide is deposited. This is not a seed layer (i.e., a layer that acts as a seed for crystal growth). They do not want a crystalline structure (column 4 lines 31-33 "O⁺ and N⁺ is implanted within the metal oxide coating changes the crystalline structure to an amorphous structure), thus teaching away from the invention as described and claimed. For this reason, as well as the additional reasons described for claim 1 above, these claims appear to be in condition for allowance. Accordingly, reconsideration and an early indication of allowance is respectfully requested.

Further regarding claim 67 and 73, the Office Action claims that certain surface free energies are inherent in the cited reference. Applicant respectfully traverses, and respectfully requests under MPEP 2144.03 that the Examiner cite a reference showing this to be the case.

' 103 Rejection of the Claims

Claims 8 and 9 were rejected under 35 USC ' 103(a) as being unpatentable over Bhattacharyya et al. (US 4,333,808) and Mahoney et al. (US 6,086,962). Applicant respectfully traverses. Bhattacharyya et al. is discussed above, and fails to provide all the recited elements of claim 1 and 3. Accordingly, reconsideration and an early indication of allowance is respectfully requested.

Claims 13-15 were rejected under 35 USC ' 103(a) as being unpatentable over Bhattacharyya et al. (US 4,333,808) and Mahoney et al. (US 6,086,962). Applicant respectfully traverses. Bhattacharyya et al. is discussed above, and fails to provide all the recited elements of claim 1 and 3. The Examiner cites to "Paragraphs 69 and 70," an obtuse reference that Applicant's do not understand upon reviewing the '962 patent as printed. Further, Mahoney is directed to making diamond films (DLCs), not batteries. This does not provide a motivation to combine. Accordingly, reconsideration and an early indication of allowance is respectfully requested.

Claims 18 and 19 were rejected under 35 USC ' 103(a) as being unpatentable over Bhattacharyya et al. (US 4,333,808) and Turner et al. (US 6,203,944). Bhattacharyya et al. is discussed above, and fails to provide all the recited elements of claim 1. Accordingly, reconsideration and an early indication of allowance is respectfully requested.

Claims 19-24, 27 and 75 were rejected under 35 USC ' 103(a) as being unpatentable over Bhattacharyya et al. (US 4,333,808) and Moriguchi et al. (US 6,576,369). Bhattacharyya et al. is discussed above, and fails to provide all the recited elements of claim 1. Further, the '369 reference discusses a graphite powder at column 8 line 14 et seq., not a solid-state deposited layer as described and claimed. Re Claim 24, the '369 column 26 line 8 et seq. describes a LiCoO₂ powder (see column 26 line 33). Regarding claim 27, the '369 abstract discusses a powder, not a thin film. Accordingly, reconsideration of these claims and an early indication of allowance is respectfully requested.

Claims 17, 31 and 32 rejected under 35 USC ' 103(a) as being unpatentable over Bhattacharyya et al. (US 4,333,808) and Bates et al. (US 5,567,210). Bhattacharyya et al. is discussed above, and fails to provide all the recited elements of claim 1. Further as to claims 31 and 32, silicon chips, while not functionally operated at temperatures of 250 or 300 C, are routinely manufactured using such temperatures. Bates deposits their battery on the chip package substrate (not the silicon chip 16), with no indication that the silicon chip is in place during the depositing or annealing of the battery. Further, Bates et al describe sintering of a pressed disc in air at 900 C (column 3 line 57) clearly indicating that their process would not harm the substrate using such temperatures. Accordingly, reconsideration and an early indication of allowance is respectfully requested.

Claims 68, 69 and 74 were rejected under 35 USC ' 103(a) as being unpatentable over Bhattacharyya et al. (US 4,333,808) and Hobson (US 5,705,293). Bhattacharyya et al. is discussed above, and fails to provide all the recited elements of claim 65. Accordingly, reconsideration and an early indication of allowance is respectfully requested.

Claims 71 and 77 were rejected under 35 USC ' 103(a) as being unpatentable over Bhattacharyya et al. (US 4,333,808) and Narwankar et al. (US 6,475,854). Bhattacharyya et al. is discussed above, and fails to provide all the recited elements of claim 65. Accordingly, reconsideration and an early indication of allowance is respectfully requested.

Claims 101-107 were rejected under 35 USC ' 103(a) as being unpatentable over Bhattacharyya et al. (US 4,333,808) and Hunt (US 6,056,857). Bhattacharyya et al. is discussed above, and fails to provide all the recited elements of claim 101, in that the reference fails to

describe an electrolyte, and teaches away from controlling crystal growth (rather, it teaches to change any crystalline structure to amorphous. The Office Action asserts motivation to combine since the Hunt reference yields a uniformly dense structure. While Hunt describes such structure, there is no indication in the references that such a uniformly dense structure is desirable in the battery or other energy-storage device as constructed in the present claims. Accordingly, reconsideration and an early indication of allowance are respectfully requested.

New claims 108-115 are added to more fully describe the elected invention. No new matter is added. Consideration and an early indication of allowance are respectfully requested.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612-373-6949) to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 502931.

Respectfully submitted,

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Date 18 December 2003 By



Charles A Lemaire

Reg. No. 36,198

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, P.O.Box 1450, Alexandria, VA 22313-1450 on this 18th day of December, 2003.

GREGORY A LEMAIRE
Name

G A Lemaire
Signature



701 Fig. 7

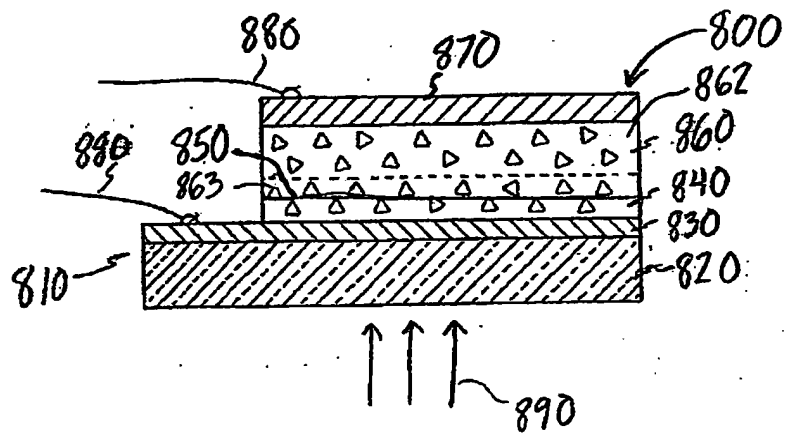
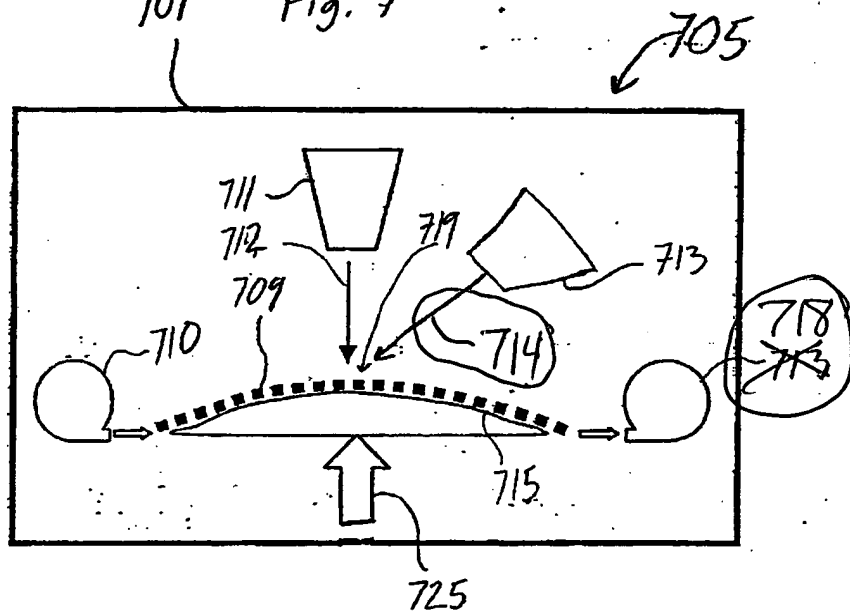
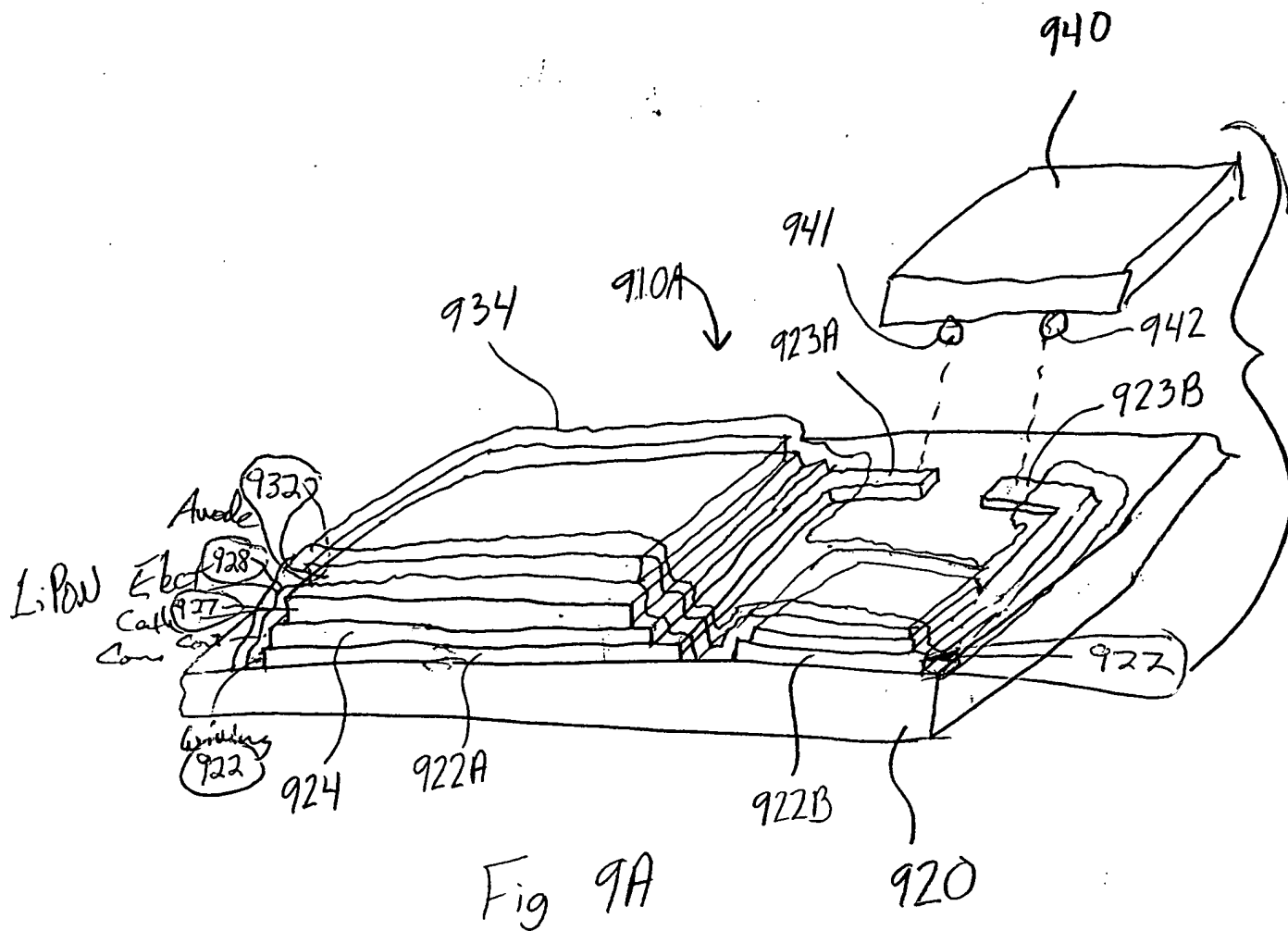
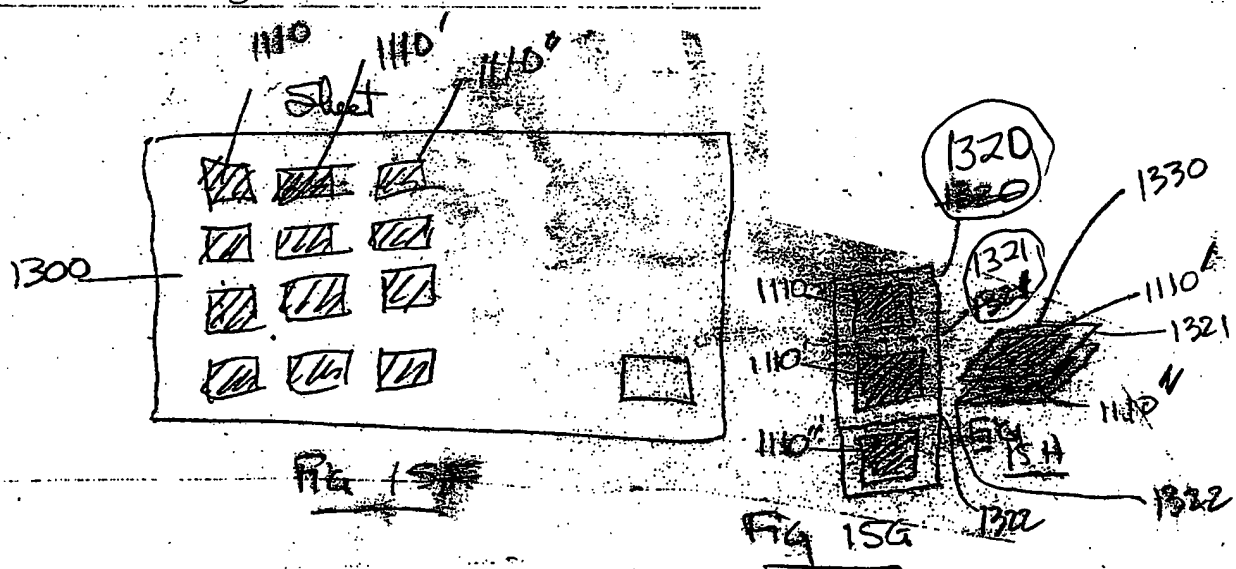
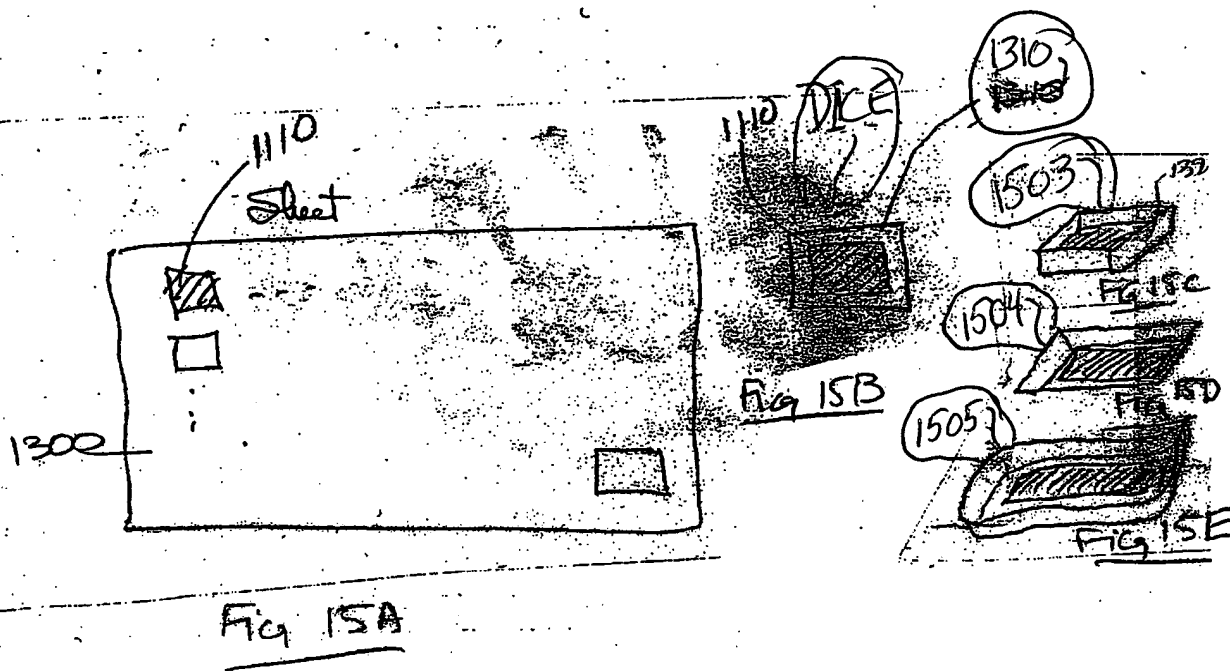


Fig. 8





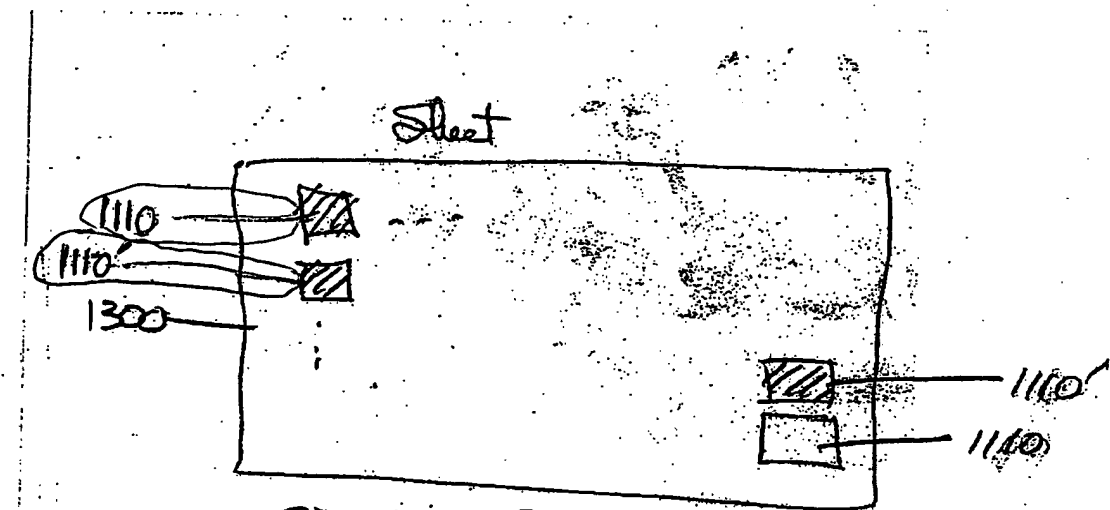


FIG 15I

egg carton vacuum form
onto form

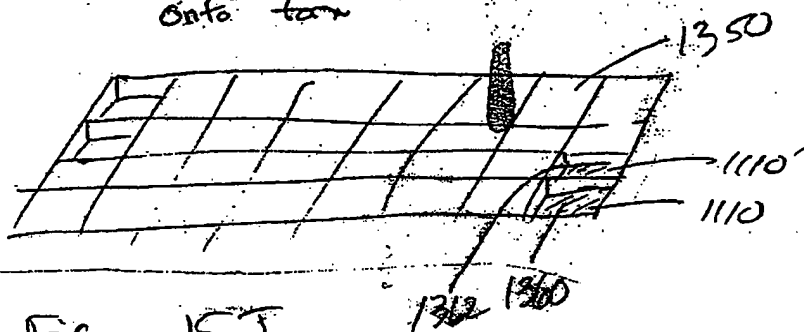


FIG 15J

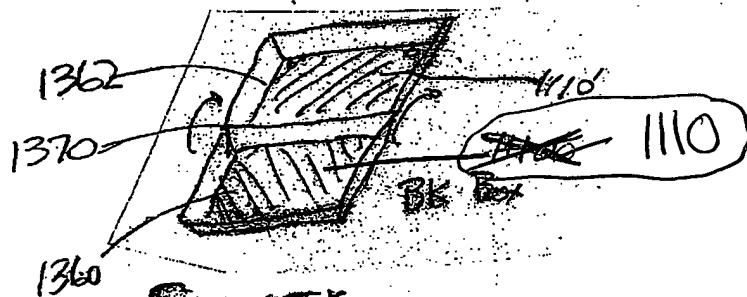


FIG 15K

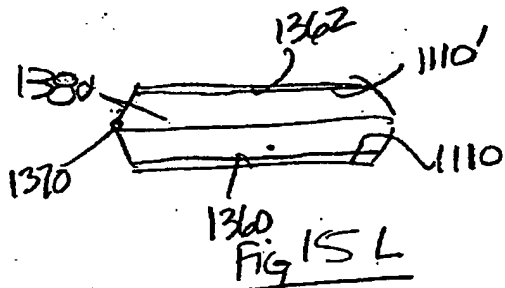


FIG 15L

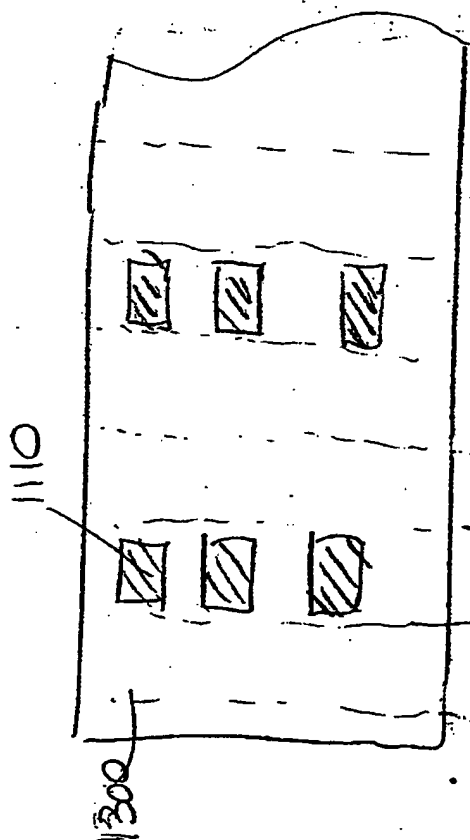


Fig. 16A



Fig. 16B

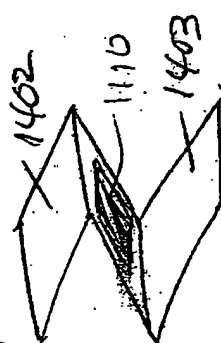


Fig. 16C

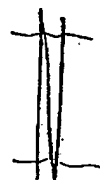


Fig. 16D

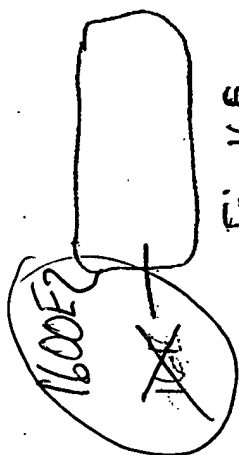
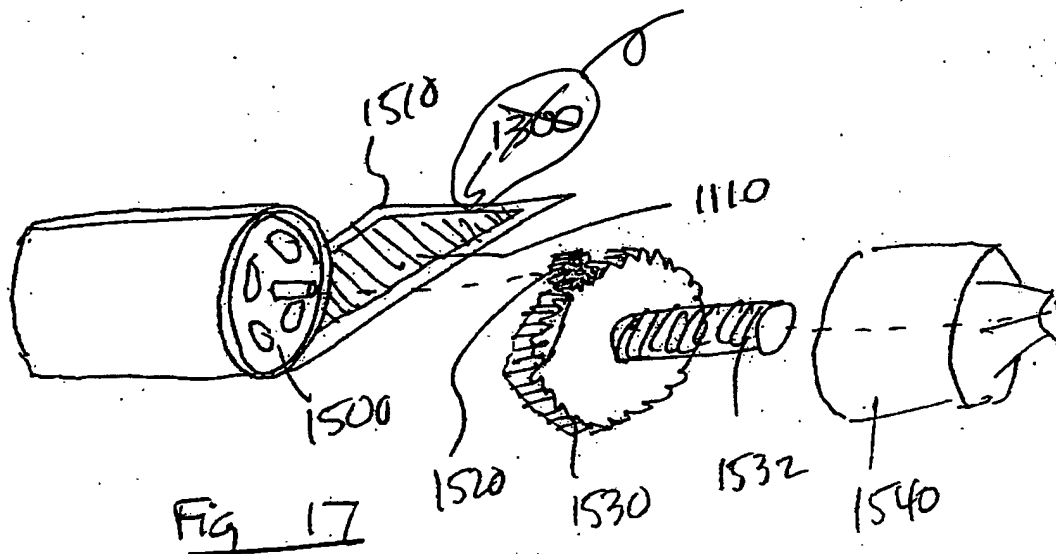


Fig. 16E





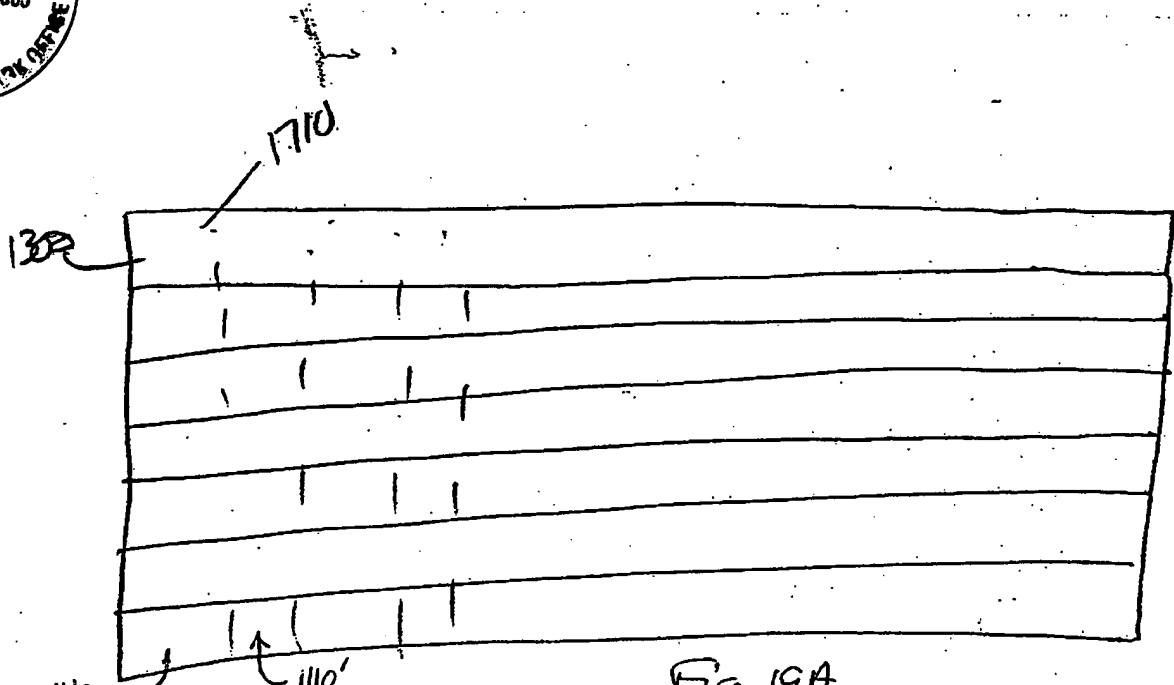


Fig 19A

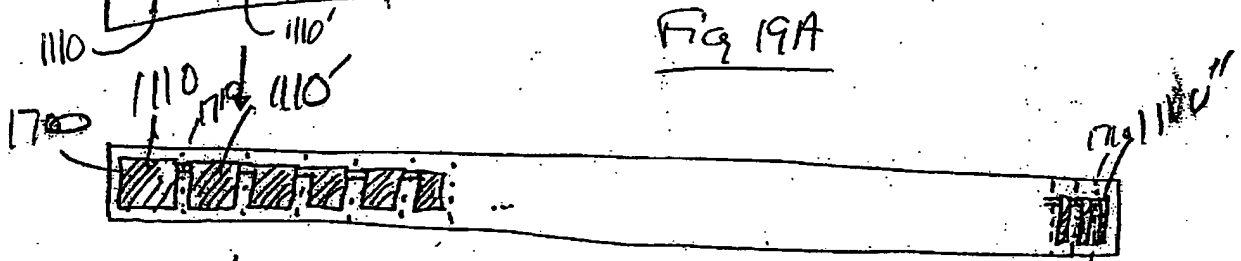


Fig 19B



Fig 19C

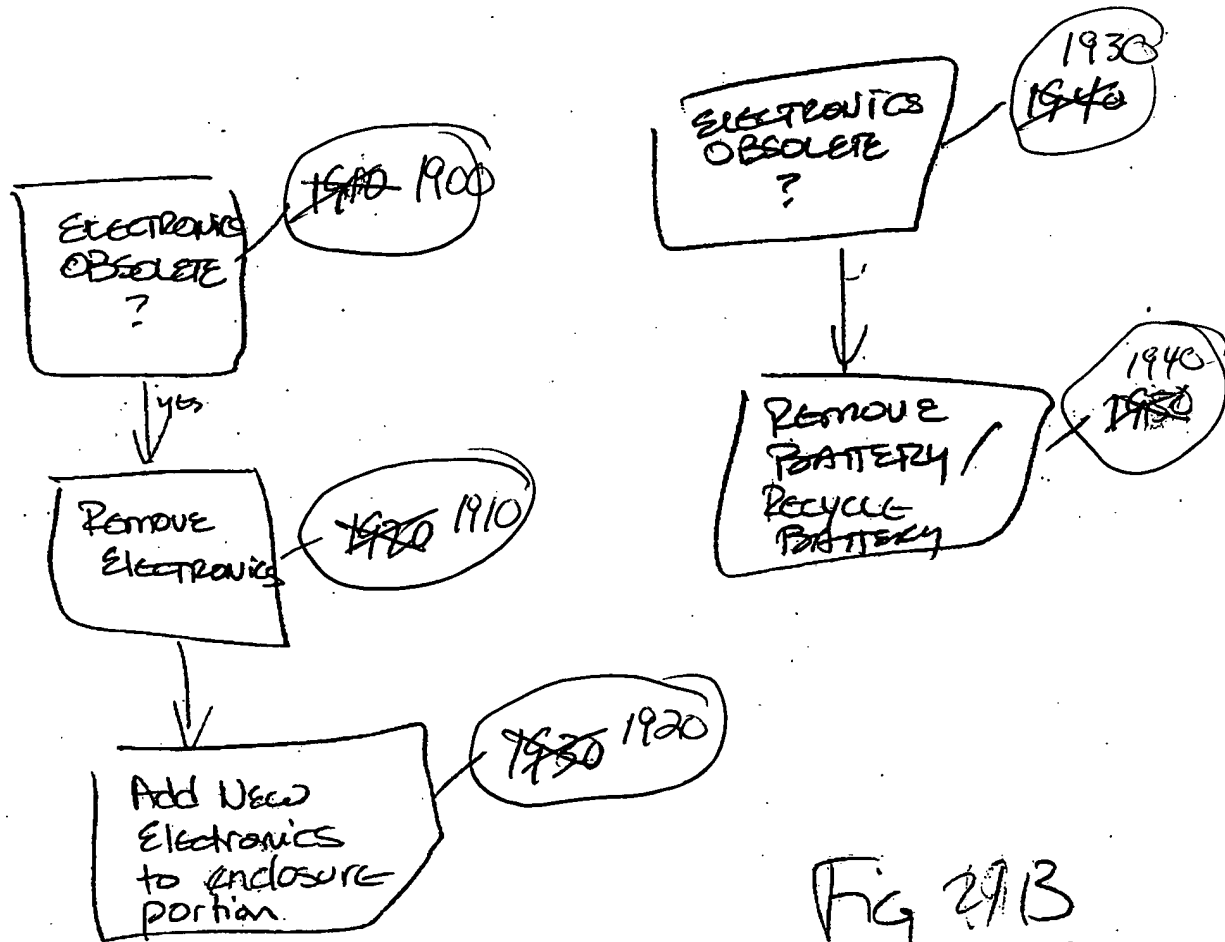


Fig 21B

Fig 21A

